

ABSTRACT OF THE DISCLOSURE

A method of manufacturing a memory integrated circuit device including a memory cell region and a peripheral circuit region on a semiconductor substrate includes the steps of (a) forming a first groove in the memory cell region on the semiconductor substrate; (b) forming a second groove in the peripheral circuit region on the semiconductor substrate; and (c) forming a memory cell transistor in self-alignment with the first groove in the memory cell region and forming a peripheral circuit transistor in the peripheral circuit region using the second groove as an isolation groove. The steps (a) and (b) are performed simultaneously.